

CLAIM AMENDMENTS

Claim 1 (currently amended): ~~In a system that comprises a gateway that interfaces to an Internet service provider or corporate network, a local area network edge device, a satellite that provides a communication link between the gateway and the local area network edge device, and one or more personal computers coupled by way of a network to the local area network edge device, a dynamic resource allocation system that supports differentiated services with different levels of priority, comprising:~~

~~an Internet protocol network that comprises:~~

~~a classifier for identifying specific types of messages; and~~

~~a dynamic assignment/multiple access (DAMA) communication protocol for transmitting data over the dynamic resource allocation system, wherein said DAMA communication protocol comprises three modes, including fixed assignment, reservation assignment, and random assignment modes.~~

A dynamic resource allocation system comprising:

one or more personal computers coupled to a local area network edge device that generates a resource request in response to received data from a user of said personal computer;

a satellite that provides a communication link;

one or more Internet protocol networks;

a gateway in connection with said local area network edge device via said communication link and interfaces to one or more said Internet protocol networks, wherein said gateway receives said resource request from said local area network edge device to set required resources;

a generator for generating messages of different types from said user data;

a classifier for identifying specific types of said messages;

a marker for marking said identifying messages; and

a scheduler for scheduling said marked messages;

wherein said gateway dynamically allocates resources to meet the requirements of each said marked messages by applying a dynamic assignment/multiple access (DAMA) communication protocol for transmitting data between said one or more personal computers and said one or more Internet protocol networks;

wherein said DAMA communication protocol comprises three modes, including fixed assignment, reservation assignment, and random assignment modes.

Claim 2 (original): The dynamic resource allocation system recited in Claim 1 wherein the satellite is a non-processing satellite.

Claim 3 (original): The dynamic resource allocation system recited in Claim 2 wherein the non-processing satellite implements a bent pipe communications link between the local area network edge device and the gateway.

Claim 4 (original): The dynamic resource allocation system recited in Claim 1 wherein the satellite is a processing satellite comprising an onboard resource management element.

Claim 5 (original): The dynamic resource allocation system recited in Claim 1 wherein the DAMA communication protocol comprises an application detection algorithm.

Claim 6 (original): The dynamic resource allocation system recited in Claim 1 wherein the DAMA communication protocol comprises a resource requirement estimation algorithm that is based on queue statistics versus performance statistics.

Claim 7 (original): The dynamic resource allocation system recited in Claim 1 wherein the DAMA communication protocol comprises a resource request that generates a resource request to set required resources.

Claim 8 (original): The dynamic resource allocation system recited in Claim 1 wherein the DAMA communication protocol comprises a resource request that sends raw queue statistics to the gateway to set required resources.

Claim 9 (original): The dynamic resource allocation system recited in Claim 1 wherein the DAMA communication protocol comprises a weighted fair queuing algorithm that performs a weighted fair queuing that drains the queues while effectively utilizing the gateway assigned resources.

Claim 10 (original): The dynamic resource allocation system recited in Claim 1 wherein the gateway comprises an algorithm that accumulates all requests received at substantially the same time.

Claim 11 (original): The dynamic resource allocation system recited in Claim 1 wherein the gateway comprises an algorithm that functions to assign each edge device a time and frequency resources based upon services classes and consumer profile for each current and previous request.

Claim 12 (canceled)

Claim 13 (previously presented): The dynamic resource allocation system recited in Claim 1 wherein, in the fixed assignment mode, a certain amount of bandwidth is allocated for the highest priority users.

Claim 14 (previously presented): The dynamic resource allocation system recited in Claim 1 wherein, in the reservation assignment mode, reservation bandwidth is allocated for users to request their demand without knowledge of others request transmissions.

Claim 15 (previously presented): The dynamic resource allocation system recited in Claim 1 wherein, in the random assignment mode, users transmit the data without making reservations.

Claim 16 (canceled)

Claim 17 (previously presented): The dynamic resource allocation system recited in Claim 1 wherein the boundary between the random assignment mode and the reservation mode is movable in order to reduce the number of collisions whenever there are more best effort users using the system.

Claim 18 (canceled)

Claim 19 (previously presented): The dynamic resource allocation system recited in Claim 1 wherein the DAMA communication protocol comprises a collision resolution algorithm.

Claim 20 (previously presented): The dynamic resource allocation system recited in Claim 1 wherein the DAMA communication protocol comprises a bandwidth request algorithm, a connection acceptance algorithm, a bandwidth usage detection algorithm, and a resource assignment algorithm.